LAKE OROVILLE RESERVOIR (2011)

Lake Oroville illustrates the devastating effects of the drought. It is a key reservoir in the State Water system, and a major source of water for Southern California.

South Coast Water District / Joint Regional Water Supply System

2015 Water Quality Report

LAKE OROVILLE RESERVOIR (2014)

Your Drinking Water Meets All Quality Standards

Since 1990, California public water utilities have provided an annual Water Quality Report to their customers. **This year's report covers calendar year 2014 water quality results.**

South Coast Water District vigilantly safeguards your water supply.

As in years past, the water delivered to your home or business meets the quality standards required by the U.S. Environmental Protection Agency (USEPA) and the State Water Resources Control Board, Division of Drinking Water (DDW).

Current Water Supply Sources

The water we need in our service area is imported from the Colorado River and Northern California through Metropolitan Water District of Southern California (Metropolitan). It comes from hundreds of miles away, across deserts and over mountains, carried here by two engineering marvels — the Colorado River Aqueduct and the State Water Project.

Water is brought from Northern California via the State Water Project aqueduct system, then lifted 1,900 feet over the Tehachapi Mountains at a rate of millions of gallons per minute on its way to Southern California.

Imported water from the Colorado River travels over 240 miles to get to Orange County. Along the way, it is lifted over 1,600 feet by a series of five pumping plants. Shown here, near Parker Dam on the Colorado River, the Gene Pumping Station boosts the water over 300 feet. From there, it flows through a series of canals, pipelines, and tunnels across the Mojave Desert and beneath the San Jacinto Mountains on its way to fill the needs of the people of Southern California.

Water is essential to life, and every drop counts.

The Need to Conserve has Never Been Greater

As California enters its fourth year of drought, water conservation has become vitally important for us all. Generally, we use up to 60% of all the water for irrigation of landscape.

Every DROP Counts

To learn more about the drought, or to find useful tips for how to conserve water, visit:

scwd.org/drought

To learn about programs and devices that can help save water, along with information on rebates for these water saving resources, visit:

scwd.org/conservation

This report contains important information about your drinking water. Translate it, or speak with someone who understands it.

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

Drinking Water Contaminants

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells.

As water travels over the surface of land or through the layers of the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animal and human activity.

Contaminants that may be present in source water include:

- **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- **Inorganic contaminants**, such as salts and metals, which can be naturally-occurring or result from urban/storm-water runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gasoline stations, urban/stormwater runoff, agricultural applications and septic systems.
- **Radioactive contaminants**, which can be naturally-occurring or be the result of oil and gas production or mining activities.
- **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban/stormwater runoff and residential uses.

In order to ensure that tap water is safe to drink, the USEPA and the DDW prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. DDW regulations also establish limits for contaminants in bottled water that must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. **The presence of contaminants does not necessarily indicate that water poses a health risk.**

More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline at (800) 426-4791.

Immuno-Compromised People

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people, such as those with cancer who are undergoing chemotherapy, persons who have had organ transplants, people with HIV/AIDS or other immune system disorders, some elderly persons, and infants can be particularly at risk from infections. They should seek advice about drinking water from their health care providers.

Cryptosporidium

Metropolitan tested its source water and treated surface water for *Cryptosporidium* in 2014 and did not detect it.

Cryptosporidium is a microscopic organism that comes from animal or human waste. If ingested, it can cause diarrhea, fever, and other gastro-intestinal symptoms. If detected in water, *Cryptosporidium* is eliminated by an effective treatment of sedimentation, filtration and disinfection.

The USEPA and the federal Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the USEPA's Safe Drinking Water Hotline at (800) 426-4791 or on the web at: www.epa.gov/safewater.

Questions About Your Water? Contact Us for Answers.

- For further information about this report, or about your water quality in general, please contact Greg Pennington at (949) 499-4555, ext. 3421.
- Our Board meets on the 2nd and 4th Thursdays of the month at 6 p.m. in Dana Point City Council Chambers, 33282 Golden Lantern. You are encouraged to attend or may view meetings live on Cox Channels 30 or 855. In addition, you may view all Board and Committee meetings live or recorded on our website, www.scwd.org.

Join us on Facebook:
facebook.com/SouthCoastWD

Follow us on Twitter:
@SouthCoastWater

Information the EPA Would Like You to Know

Disinfectants and Disinfection Byproducts

Disinfection of drinking water was one of the major public health advances in the 20th century.

Disinfection was a major factor in reducing waterborne disease epidemics caused by pathogenic bacteria and viruses, and it remains an essential part of drinking water treatment today.

Chlorine disinfection has almost completely eliminated from our lives the risks of microbial waterborne diseases. Sufficient chlorine is added to your drinking water at the source of supply so that it does not completely dissipate through the distribution system pipelines. This "residual" chlorine helps prevent the growth of bacteria in the pipelines that carry drinking water from the source to your home.

However, chlorine can react with naturally-occurring materials in the water to form unintended chemical byproducts that may pose health risks, called disinfection byproducts (DBPs). Trihalomethanes (THMs) and Haloacetic Acids (HAAs) are the most common and most studied DBPs found in drinking water treated with chlorine.

All of South Coast Water District's water is disinfected with chloramines, a combination of chlorine and ammonia. Chloramines are effective killers of bacteria and other micro-organisms that may cause disease. Compared to chlorine alone, chloramines last longer in the distribution system, form lower levels of THMs and HAAs, and have no odor when used properly.

A major challenge is how to balance the risks from microbial pathogens and DBPs. The Safe Drinking Water Act requires the USEPA to develop rules to achieve these goals. In 1979, the USEPA set the maximum amount of total THMs allowed in drinking water at 100 parts per billion as an annual running average. Effective in January 2002, the Stage 1 Disinfectants/Disinfection Byproducts Rule lowered that maximum amount to 80 parts per billion. It also added HAAs to the list of regulated chemicals in drinking water. **Your drinking water complies with the Stage 1 Disinfectants/Disinfection Byproducts Rule.**

In 2006, the USEPA finalized Stage 2 of the regulation, which further controls allowable levels of DBPs in drinking water without compromising disinfection. In 2008, South Coast Water District completed a distribution system evaluation in compliance with the Stage 2 regulation. **The DDW has approved the District's Stage 2 Monitoring Plan. Full Stage 2 compliance began in 2012.**

It is critical for individuals who use kidney dialysis machines or maintain fish ponds, tanks or aquaria to be aware of the disinfectants in their public water system. In this way, they can make necessary adjustments in water quality for safe dialysis treatment and marine environment.

Did You Know?

You can water whenever you want during a Water Supply Warning — if you use a hose with an automatic shut-off nozzle.

Drinking Water Fluoridation

Fluoride has been added to U.S. drinking water supplies since 1945. Of the 50 largest cities in the U.S., 43 fluoridate their drinking water.

In December 2007, Metropolitan Water District of Southern California joined a majority of the nation's public water suppliers in adding fluoride to drinking water to prevent tooth decay. In line with recommendations from the DDW and the U.S. Centers for Disease Control and Prevention, Metropolitan adjusted the natural fluoride level in treated water from the Colorado River and State Water Project to the optimal range for dental health of 0.7 to 1.3 parts per million. Fluoride levels in drinking water are limited under California regulations to a maximum of two parts per million.

For information about water fluoridation, check:

www.cdc.gov/fluoridation/, or

www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Fluoridation.shtml.

For information about Metropolitan's fluoridation program, contact Edgar G. Dymally at (213) 217-5709 or edymally@mwdh2o.com.

About Lead in Tap Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing.

South Coast Water District is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking.

If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available on the web at www.epa.gov/safewater/lead, or you may call the USEPA's Safe Drinking Water Hotline at (800) 426-4791.

Want Additional Information?

There's a wealth of information on the internet about Drinking Water Quality and water issues in general, especially the drought and conservation. Some good sites to begin your own research are:

South Coast Water District: www.scwd.org

Metropolitan Water District of Southern California: www.mwdh2o.com

U.S. Environmental Protection Agency: www.epa.gov/safewater

California Department of Water Resources: www.water.ca.gov

Water Conservation: www.bewaterwise.com • www.saveourwater.com

Water Saving Resources & Rebates: www.ocwatersmart.com

Source Water Assessments

Imported Water Assessment

Every five years, Metropolitan Water District of Southern California is required by DDW to examine possible sources of drinking water contamination in its State Water Project and Colorado River source waters. **In 2012, Metropolitan submitted to DDW its updated Watershed Sanitary Surveys for the Colorado River and State Water Project, which include suggestions for how to better protect these source waters.** Both source waters are exposed to stormwater runoff, recreational activities, wastewater discharges, wildlife, fires, and other watershed-related factors that could affect water quality.

Water from the Colorado River is considered to be most vulnerable to contamination from recreation, urban/stormwater runoff, increasing urbanization in the watershed, and wastewater. Water supplies from the State Water Project are most vulnerable to contamination from urban/stormwater runoff, wildlife, agriculture, recreation, and wastewater.

The USEPA also requires Metropolitan to complete one Source Water Assessment (SWA) that utilizes information collected in the Watershed Sanitary Surveys. Metropolitan completed its SWA in December 2002. The SWA is used to evaluate the vulnerability of water sources to contamination and helps determine whether more protective measures are needed.

A copy of the most recent summary of either the Watershed Sanitary Surveys or the SWA can be obtained by calling Metropolitan at (213) 217-6850.

Groundwater Assessment

An assessment of South Coast Water District's groundwater source was completed in June 2007.

This local water source is considered most vulnerable to contamination from gas stations, dry cleaners and a wastewater treatment plant in the general area.

South Coast Water District carefully tests its well water to assure that the water is safe and in compliance with all Drinking Water Standards.

A copy of the complete groundwater source assessment can be obtained by calling (949) 499-4555, ext 1.

Chart Legend

Mandatory Water Quality Standards

Drinking water standards established by the USEPA and DDW set limits for substances that may affect consumer health or aesthetic qualities of drinking water. The charts in this report show the following types of water quality standards:

- **Primary Drinking Water Standard:** Maximum Contaminant Levels (MCLs) for contaminants that affect health along with their monitoring and reporting requirements and water treatment requirements.
- **Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the Public Health Goals or Maximum Contaminant Level Goals as is economically and technologically feasible.
- **Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **Secondary Maximum Contaminant Levels (MCLs)** are set to protect the odor, taste, and appearance of drinking water.
- **Regulatory Action Level (AL):** The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.

Voluntary Water Quality Goals

In addition to mandatory water quality standards, the USEPA and DDW have set voluntary water quality goals for some contaminants. Water quality goals are often set at such low levels that they are not achievable in practice and are not directly measurable. Nevertheless, these goals provide useful guideposts and direction for water management practices. The charts in this report include three types of water quality goals:

- **Public Health Goal (PHG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.
- **Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the USEPA.
- **Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

2014 Metropolitan Water District of Southern California Treated Surface Water

Chemical	MCL	PHG, or (MCLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
Radiologicals – Tested in 2014						
Alpha Radiation (pCi/L)	15	(0)	ND	ND – 4	No	Erosion of Natural Deposits
Beta Radiation (pCi/L)	50	(0)	5	4 – 6	No	Decay of Man-made or Natural Deposits
Uranium (pCi/L)	20	0.43	3	2 – 3	No	Erosion of Natural Deposits
Inorganic Chemicals – Tested in 2014						
Aluminum (ppm)	1	0.6	0.17	0.08 – 0.31	No	Treatment Process Residue, Natural Deposits
Barium (ppm)	1	2	0.11	0.11	No	Refinery Discharge, Erosion of Natural Deposits
Fluoride (ppm) treatment-related	Control Range 0.7 – 1.3 ppm Optimal Level 0.8 ppm	0.8	0.7 – 1	No	Water Additive for Dental Health	
Secondary Standards* – Tested in 2014						
Aluminum (ppb)	200*	600	170	80 – 310	No	Treatment Process Residue, Natural Deposits
Chloride (ppm)	500*	n/a	90	87 – 92	No	Runoff or Leaching from Natural Deposits
Color (color units)	15*	n/a	1	1	No	Naturally-occurring Organic Materials
Odor (threshold odor number)	3*	n/a	1	1	No	Naturally-occurring Organic Materials
Specific Conductance (µmho/cm)	1,600*	n/a	980	960 – 1,000	No	Substances that Form Ions in Water
Sulfate (ppm)	500*	n/a	230	220 – 240	No	Runoff or Leaching from Natural Deposits
Total Dissolved Solids (ppm)	1,000*	n/a	630	600 – 650	No	Runoff or Leaching from Natural Deposits
Unregulated Chemicals – Tested in 2014						
Alkalinity, total as $CaCO_3$ (ppm)	Not Regulated	n/a	120	120 – 130	n/a	Runoff or Leaching from Natural Deposits
Boron (ppm)	NL = 1	n/a	0.1	0.1	n/a	Runoff or Leaching from Natural Deposits
Calcium (ppm)	Not Regulated	n/a	72	70 – 74	n/a	Runoff or Leaching from Natural Deposits
Hardness, total as $CaCO_3$ (ppm)	Not Regulated	n/a	290	280 – 290	n/a	Runoff or Leaching from Natural Deposits
Hardness, total (grains/gallon)	Not Regulated	n/a	17	16 – 17	n/a	Runoff or Leaching from Natural Deposits
Magnesium (ppm)	Not Regulated	n/a	26	25 – 27	n/a	Runoff or Leaching from Natural Deposits
pH (pH units)	Not Regulated	n/a	8.1	8.1	n/a	Hydrogen Ion Concentration
Potassium (ppm)	Not Regulated	n/a	4.6	4.4 – 4.8	n/a	Runoff or Leaching from Natural Deposits
Sodium (ppm)	Not Regulated	n/a	94	89 – 99	n/a	Runoff or Leaching from Natural Deposits
Total Organic Carbon (ppm)	TT	n/a	2.6	2.4 – 2.9	n/a	Various Natural and Man-made Sources

ppb = parts-per-billion; **ppm** = parts-per-million; **pCi/L** = picoCuries per liter; **µmho/cm** = micromhos per centimeter; **ND** = not detected;
MCL = Maximum Contaminant Level; **(MCLG)** = federal MCL Goal; **PHG** = California Public Health Goal; **NL** = Notification Level;
n/a = not applicable; **TT** = treatment technique *Contaminant is regulated by a secondary standard.

Turbidity – combined filter effluent Metropolitan Water District Diemer Filtration Plant	Treatment Technique	Turbidity Measurements	TT Violation?	Typical Source of Contaminant
1) Highest single turbidity measurement	0.3 NTU	0.06	No	Soil Runoff
2) Percentage of samples less than 0.3 NTU	95%	100%	No	Soil Runoff

Turbidity is a measure of the cloudiness of the water, an indication of particulate matter, some of which might include harmful microorganisms. **NTU** = nephelometric turbidity units
Low turbidity in Metropolitan's treated water is a good indicator of effective filtration. Filtration is called a "treatment technique" (TT).
A treatment technique is a required process intended to reduce the level of contaminants in drinking water that are difficult and sometimes impossible to measure directly.

Unregulated Chemicals Requiring Monitoring

Chemical	Notification Level	PHG	Average Amount	Range of Detections	Most Recent Sampling Date
Bromochloromethane (ppb)	n/a	n/a	9	ND – 71	2014
Chlorate (ppb)	800	n/a	81	38 – 160	2014
Chromium, Hexavalent (ppb)	MCL = 10	0.02	0.17	0.035 – 1.1	2014
Chromium, Total (ppb)**	MCL = 50	MCLG = 100	0.33	ND – 1.1	2014
Molybdenum, Total (ppb)	n/a	n/a	4.8	4.4 – 5	2014
Strontium, Total (ppb)	n/a	n/a	1,100	960 – 1,200	2014
Vanadium, Total (ppb)	50	n/a	3	2.3 – 3.3	2014

**Total chromium is regulated with an MCL of 50 ppb but was not detected, based on the detection limit for purposes of reporting of 10 ppb.
Total chromium was included as part of the unregulated chemicals requiring monitoring.

2014 South Coast Water District / Joint Regional Water Supply System Water Quality

	MCL (MRDL/MRDLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
Disinfection Byproducts					
Total Trihalomethanes (ppb)	80	35.8	0.0 / 56.0	No	Byproducts of Chlorine Disinfection
Haloacetic Acids (ppb)	40	20.5	8.9 / 34.7	No	Byproducts of Chlorine Disinfection
Chlorine Residual (ppm)	(4 / 4)	1.84	0.10 / 2.30	No	Disinfectant Added for Treatment
Aesthetic Quality					
Color (color units)	15*	1	1	No	Erosion of Natural Deposits
Turbidity (NTU)	5*	0.15	0.12 / 0.19	No	Erosion of Natural Deposits
Odor (threshold odor number)	3*	1	1	No	Erosion of Natural Deposits

Six locations in the distribution system are tested quarterly for total trihalomethanes and haloacetic acids; nine locations are tested monthly for chlorine, color, odor and turbidity.
MRDL = Maximum Residual Disinfectant Level; **MRDLG** = Maximum Residual Disinfectant Level Goal; **NTU** = nephelometric turbidity units; **ND** = not detected
*Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).

	MCL	MCLG	Highest Monthly % Positives	MCL Violation?	Typical Source of Contaminant
Bacterial Quality					
Total Coliform Bacteria	5%	0	0.0%	No	Naturally Present in the Environment

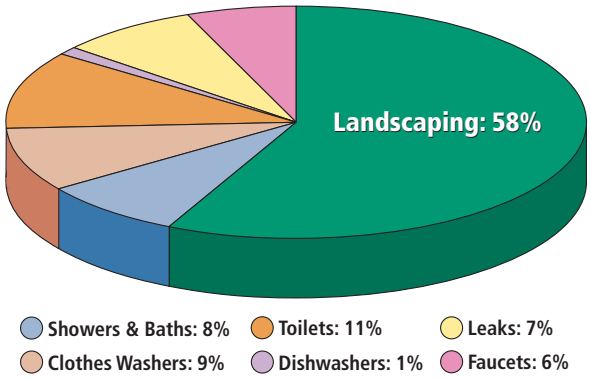
No more then 5% of the monthly samples may be positive for total Coliform bacteria.
The occurrence of 2 consecutive total Coliform positive samples, one of which contains fecal Coliform/*E coli*, constitutes an acute MCL violation.



How Residential Water is Used throughout Southern California

Outdoor watering of lawns and gardens makes up approximately 60% of home water use. By cutting your outdoor watering, you can dramatically reduce your overall water use.

Visit **www.bewaterwise.com** for water saving tips and ideas for your home and business.



Data is representative of average consumption; your water usage may vary.

Tips for Effective Water Conservation Outside Your Home

Check your sprinkler system for leaks, overspray and broken sprinkler heads and repair promptly:
Saves up to 500 gallons per month

Use a broom instead of a hose:
Saves up to 150 gallons each time

Water your plants in the early morning or evening:
Saves up to 25 gallons each time

Remove the turf from your yard:
Saves about 42 gallons per square foot/per year

Rain barrels: ***Saves about 600 gallons per year***

Rotating nozzles for pop-up spray heads:
Uses 20% less water than conventional sprinkler heads

Additional water saving steps and devices are also available, and some of these are eligible for substantial rebates. Consider replacing your lawn with drought tolerant plants, synthetic turf, or permeable hardscape. Add rotating sprinkler nozzles,or a drip line to enhance your automated irrigation system. Adding organic mulch saves hundreds of gallons of water each year.

For complete rebate information
for these water saving resources, visit:
www.ocwatersmart.com.

Talk to your family and friends about saving water.
If everyone does a little, we all benefit a lot.

What is the District Doing to Combat the Drought?

The District is taking proactive steps to bolster local water supplies. Proactive measures that will have long-term value to our customers include:

- **Working to diversify water portfolio:**
  - Expanding the recycled water distribution system
  - Bringing a Desalination Facility to fruition
  - Expanding capacity of the Groundwater Recovery Facility
- **Engaging the community to encourage water-use reductions**
  - Notifying of potential leaks
  - Informing residents of water ran for a 24-hour cycle
  - Working with large landscape irrigators to convert to recycled water
  - Working with single family residences and HOAs to upgrade inefficient irrigation systems to weather-based irrigation controllers and high efficiency sprinkler nozzles

For more information, visit **scwd.org/drought**.

Conservation Tips for Inside Your Home . . .

Collect water used to wash fruits and vegetables:
Use it to water your houseplants

Don't run water to thaw food:
Defrost in the refrigerator

Every minute you cut from your shower:
Saves up to 5 gallons

Install low-flow shower heads:
Saves 2.5 gallons per minute

Install aerators on the kitchen faucet:
Reduce flow to less than 1 gallon per minute

Turn off the water while you brush your teeth:
Saves up to 2.5 gallons per minute

Plug the sink instead of running water to rinse your razor:
Saves up to 300 gallons a month

Wash only full loads of laundry and dishes:
Saves up to 50 gallons per week

Fix household leaks promptly: ***Saves up to 100 gallons per day***

Buy water-saving devices like high-efficiency toilets and clothes washers. You'll save gallons of water per day, and many of these items are eligible for rebates. To learn more, visit: **www.ocwatersmart.com**.

Talk to your family and friends about saving water. If everyone does a little, we all benefit a lot.

Level 2 Water Supply Warning

Mandatory Water Conservation Requirements

- **Limit landscape irrigation to 1 day per week** between 5 p.m. and 9 a.m.
- **Residential watering day:** Monday; **Business, HOA, government, school:** Wednesday
- **Limit watering to 10 minutes** per sprinkler station/zone, with no run-off
- **Fix water leaks** within 2 business days
- **No filling or refilling** of ornamental lakes or ponds
- **No filling or refilling residential pools or spas**; if a residential pool is already full and water evaporates, can maintain a full pool by filling once a month
- **No hosing down or washing vehicles**, except at a commercial car washing facility or by a commercial mobile detailer that uses its own source of water
- **No hosing or washing down** hard or paved surfaces
- **Retrofit of plumbing fixtures** exclusively with water-conserving fixtures upon sale or transfer of property ownership
- **Turn off irrigation systems when it rains**

For a full list of requirements, including golf course, HOA, construction, commercial food service, and lodging requirements, **visit scwd.org/drought**.